1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

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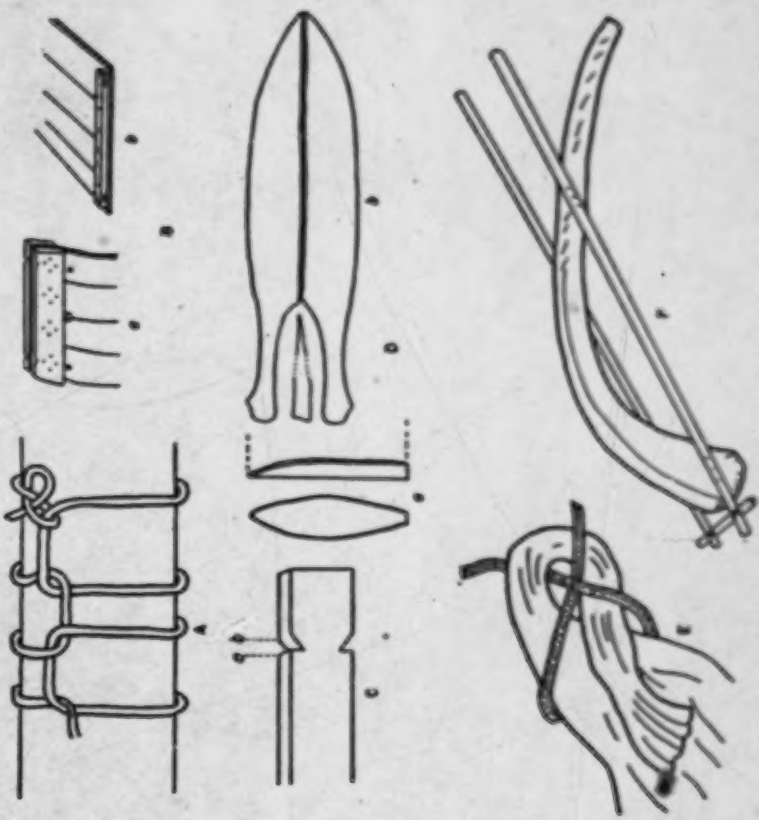


FIG. 5. Knife Manufacturing Techniques: A, Hammock hitch for ax handle; B, Triangular counterweights; C, Notched handles; D, Bentwhere for fire; E, Sheep horn for ways; F, Bending frame for green handles.

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

283 thumb, pulled free, and set aside. When these loose strands have been exhausted, the worker using her fingernails, picks strands away from the block and then strips them free. This continues until the entire block has been separated into individual strands of line. Each of these strands is now placed on the woman's knee and twisted. This is done by moistening the flat of the fingertips with saliva and using them to rub the sinew strand toward the body of the worker. The ends of each strand are then twisted by twisting them between the moistened thumb and index finger. The strands are preserved for sewing moccasins and

[462] mittens. All line is manufactured by women. In addition to native cordage, people use manila rope, sewing thread, brass wire, and insulated copper cable for sewing and lashing.

284 The principal knots used are simple ones and include the single and double overhand, the "choker" or running noose, the slip hitch, and the weaver's knot or short bend. The running noose is used to fasten straws, used as stickers, to a fish net. The slip hitch is widely used when a knot is required which can readily be opened. It is employed, for example, to tie tent ropes to guy posts or to hang up bags of food. The short bend is used to secure two ends of line and is also employed to fasten a length of line to the corner of a tarp (Fig. 3, a). The split handle of an ax is sometimes bound together with babiche applied as a marlin or hammock hitch (Fig. 3, c). When a moosehide or beaver skin is baked to a stretcher it often secured at the beginning with a lark's head or cow hitch. This knot is also occasionally used in beginning the filling of the center panel of snowshoes. Women also braid a wooden line from yarn, making a four strand sennit braiding which is used to hold mittens around the neck.[1]

281 Skinwork. Two types of skinwork may be distinguished: the skinning and stretching of furs furs designed for commerce, and the skinning, stretching, and tanning of moosehide and caribou hide used in domestic manufactures.

For bearing animals, which are trapped or shot, are usually brought into camp before being skinned. In skinning a small animal, such as a squirrel, weasel, mink, or muskrat, the animal is placed on its back, the hind legs outstretched. With a sharp pocket knife, a cut is made at the extremity of one of the rear legs extending through the skin to the muscle. The cut is continued up the leg, across the underneathen of the body and to the pads at the lower end of the other leg. In making this incision, care must be taken not to cut through the muscle tissue and expose the viscera. The cut passes centrically to the anus and male genitals. After the cut is completed the animal is seized by one of its hind legs and the index finger of the other hand inserted between the skin and muscle tissue at approximately the second joint. Using the finger, the skin is loosened all around the leg at this point. When this is done the skin is stripped away from the lower portion of the leg and paw. The same process is repeated on the opposite hind leg. The skin is now pulled away from the upper portion of each leg. Upon reaching the body, the finger is inserted under the skin to loosen it from the lower region of the animal's back. A second cut is then made extending in a semicircle from the first horizontal cut posteriorly around the male genitals and anus. Following this incision, the index finger is again inserted between the skin and the back muscle of the animal and worked toward the tail. Upon reaching the tail, the finger joins the thumb to pull

[1] See Chamberlain and Shaw, Encyclopedia of Knots (1948), pp. 18, 19, Fig. 6.

1: Honigmann K-S (1943-1945) 1949 ND12 Nahane ND12

378 split spruce sapling, about three quarters of an inch in diameter. While the inner surface
335 of the pole is carefully placed, the outer bark is not removed. This crossplece is nailed about a foot below the first pair and at the lowest point of the rising curve. The worker next cuts four crossplecces two inches wide and a quarter inch thick. These are placed along the body of the vehicle, beginning at the extreme rear and about twenty inches apart. They do not, however, extend the full width of the toboggan but to about three quarters of an inch from each side. On that side of the crossplece which is to fit against the toboggan boards, the worker cuts two grooves at points about one inch from either end. These grooves are cut about three quarters of an inch wide and half an inch deep. To cut these grooves, they are first outlined with a pencil. The extremes of the groove are then sawed to the proper depth. Using the tip of a butcher knife as a chisel, the worker removes the wood between the cuts of the saw. The blade of the knife is also used to trim away uneven edges of wood. The outer edges and corners of each crossplece are bevelled. The piece is then nailed to the toboggan, the nails being driven down from the upper surface. The excess length of nail crossing through the wood of the running surface is bent back toward the rear of the vehicle.

Old Man pointed out that this was an unsatisfactory way of constructing a toboggan since the bent nails would work away from the boards when the vehicle was in use. Also wear on the boards, such as would be produced by travelling over windfalls, would soon expose too much of the nailed surface. These predictions were fulfilled. After his first trip with the new toboggan Hans removed the nails and drove them into the vehicle from the running surface. Old Man pointed out that many people join the crossplecces to the runners with babiche line. When this is done, the worker first drills a hole through the thickness of the crossplece and then makes two holes through the runners. The line is countersunk where it passes under the body of the vehicle.

When all of the crossplecces are in place, the running surface of the toboggan is placed smooth, care being taken to avoid the projecting nails. The rear end of the boards are sawed even with the last crossplece. A three quarter inch hole is drilled in the exact center of the front of the vehicle between the two center boards and directly below the forward pair of crossplecces. Here the guide rope, a piece of manila line about a half inch in diameter and four yards long, will be tied. Two holes, half an inch in diameter, are then drilled in the front of each of the outside running boards immediately below the forward crossplecces. In line with these holes, grooves are cut in the outer bevelled edges of the forward cross-
[298] plecces. From these holes lines, of double twisted babiche or insulated copper cable, bend around the front of the vehicle and are then drawn back to the first grooved crossplece where they are fastened together. These lines serve to prevent the curve from having the toboggan when the wood becomes damp. On each side of the toboggan, between the first and last grooved crossplecces, a tight babiche or insulated wire line is strung. The line passes through the grooves and is fastened to the rear crossplece. This lashing is used to secure the dog harness, and under it passes the cordage that secures goods on the toboggan.

378 An attempt was made to note the questions expressed by Hans during the construction
335 of a toboggan. He was somewhat uncertain if the materials available were adequate for the
157 task. For example, he was dissatisfied with the fact that one of the boards was bowed from black birch instead of white, fearing that the knots would cause it to split. In putting to-

1: Honigmann E-5 (1943-1945) 1949 ND12 Nahane ND12

much longer than those found on toboggans. Instead of fitting on the rear of the conveyance, the handlebars of a sleigh extend about halfway to the front of the vehicle where they are screwed in place. A lashing of babiche runs along each side of the sleigh body and is used for tying down the load. Shafts are employed with the dog harness. These are cut from green spruce poles, about six feet long and three inches in their greatest diameter. They are attached to the sleigh by means of babiche. The line passes through a pair of holes drilled in the most forward stanchion on each side of the sleigh and through corresponding holes drilled at the lower end of each shaft. 493 398 335 [5 8 9]

Sleighs are packed the same way as toboggans and their management follows similar principles. When not in use they stand on one side or else are stored on sleigh racks. When left standing with the runners in the snow, ice forms which must be knocked off before the vehicle can be used. 495

Toy sleds, about three or four feet long, are played with by children around the winter settlements. 524

Foot travel is the commonest form of overland summer travel, although some Nelson Indian children and women ride horses when long distances must be covered. In winter, children from five or six years of age generally walk, while younger children are packed on the mother's back or else ride in sleighs and toboggans. No particular type of foot-gear is regarded as most suitable for land travel in summer, although moccasins are preferred for hunting. In winter moccasins are always worn and, under these, snowshoes. 481 492 291

Snowshoes have several functions. By relieving the strain of plodding through deep snow and the problem of slipping on an unevenly packed trail, they reduce fatigue in winter travel. They also facilitate travel, since a person can go faster on snowshoes than by plodding through deep snow unaided. Finally these aids are necessary in breaking trail for dogs, and therefore increase the daily distance which these animals can cover. 292

Snowshoes are of two types. The first, used for hunting and trapping, generally equals the wearer's height in length and is about a foot wide. These are used when a man desires to travel cross country as rapidly as possible, the size of the webbed area preventing him from sinking too deeply into the snow. While such "big snowshoes" are known, their use was not observed among the Upper Liard Indians during the period of field work. The second type is used in breaking trail for dogs and vehicles and for hunting or trapping. Their length is also apportioned to the height of the wearer, a five foot man generally wearing snowshoes about three feet long and ten inches wide. Left and right foot snowshoes are recognized, the greatest curve of the wood being on the outside of the foot. Snowshoe frames are prepared by men and the panels are almost always filled by women. The details of lacing and of the foot lashing follow the style which has been traditional since aboriginal times and will not be described here. [294]

In contrast to what has been said for other areas,[18] the Kaska Indian tends to walk on 481

[18] A detailed description of putting on, walking, and turning with snowshoes will be found in Osgood, Ingalik Material Culture (1940), 149-150. The picture he gives there is in complete agreement with what was noted among the Kaska. Personal use of snowshoes revealed that it takes no more than two or three hours to become used to them in walking. Learning to turn takes longer time, and a number of days are required before their presence on the foot seems to be consciously noted. So far as their indispensability is concerned, there can be no question. [17]

291 sole sewed inside to make them more comfortable for
294 walking. Formerly when holes came in the soles or toes of moccasins they were soled and patched. Nowadays many people do not trouble doing this but throw away moccasins when the soles wear into holes. The laces or strings of moccasins are arranged somewhat differently from the common methods in vogue among the Interior
291 Salish and Kutenai. Each moccasin has two strings, one
294 on each side. One end of the string is knotted to prevent pulling through, and the other end is passed from
284 the inside through an awl hole made in the foot part of the moccasin a little below the upper edge and about half way between the heel and toe or immediately below the shin bone. The string now passes through two holes made close together two or three inches further forward on the side of the instep near the junction of the foot piece with the tongue and upper. It passes in through one hole and out through the other. This arrangement makes a loop on each side of the foot through which the free ends of the strings are passed from opposite sides across the front of the ankle, keeping in place the front of the uppers, which are folded across the top or free part of the tongue. The two strings are then wound around the uppers from opposite directions and their ends tied. This method of arranging moccasin laces, although good, is inferior to the common methods of the Interior Salish and Kutenai. Among the Tahltan I have not noticed laces consisting of a single string encircling the foot nor with double loops at the sides, nor with ends twisted back around the loops, nor with strings passing through the tongue and uppers.

291 Wet moccasins were not stuffed with dry grass
294 to shape them when drying. Formerly small sticks were used by some to keep them stretched.

No lasts were used in the making or shaping of moccasins.

No sandals were used and no fish-skin moccasins.

[292 Only fancy moccasins had double tongue pieces. The ornamented piece was uppermost. The lower piece was considered the real tongue. Sometimes the outside of the leather was turned in, whereas the leather in the rest of the moccasin was always the reverse way.

In shape, tongues were universally rounded in the lower part where they fitted into the foot piece of the moccasin. Most of them were cut square across at the upper edge. A few, however, had the upper edge more

292 its introduction. The sharp-toed type is said to
294 have been adopted from the Kaska and after its intro-
duction became for a time the common shoe of the
[77] Tahltan. Later it was superseded by the shovel-toed
type adopted from the Tagish and upper Taku Indians
and this kind is now almost the only shoe used by the
tribe.

4) Two other kinds of snowshoes are mentioned by the Tahltan as having been in use formerly. One of these called the "duck's breast-bone shoe," seems to have resembled the "shovel shoe" -- somewhat in the form of the toe, but the latter was wider and less curved towards. I did not receive
[78] further information on this type of shoe except that it was also used by the Tagish formerly.

5) The other kind of snowshoe called "round or oval shoe" had a frame of two sticks which were thinned and joined together with a strong lashing at the toe. The latter was wider and more rounded than the present round-toed shoe of the Kaska, which has a very narrow point. It had only one cross bar forward of the foot and two in all. It seems to have resembled the flat shoe No. 2 in every way except that the "nose" was turned up and possibly a little narrower, and the frame was always of two pieces. This shoe
[79] therefore seems to correspond to the ski-ca or ordinary snowshoe of the Carrier. (See Morice p. 133). It seems to be almost if not quite obsolete nowadays - but it is said to have been at one time very common among both the Tahltan and Kaska. Snowshoes of the bear foot type (See Morice p. 134, Fig. 141), according to my informants, were never used by the Tahltan even in remote times.

[63] Some snowshoes especially those of women are
292 ornamented with short tufts of colored yarn at intervals along the outside of the frame and on the "nose." It seems this is comparatively modern. (See National Museum specimen No. 37.)

292 The tie strings or straps of snowshoes were
294 of thongs or strips of leather. It seems sometimes two strings were used and sometimes a single piece. The latter is said to be the oldest. The methods of adjusting and tying these straps to the snowshoe and to the foot varied in different tribes. Some informants claimed a tie exactly similar to that used by the Carrier (as shown by Morice, Fig. 141) was in use. I noticed two methods of adjusting the strings

among the Tahltan. These will be seen at a glance by referring to the sketches. Both are single string fastenings; both were common and both are said to be old. Of these two common styles, that represented by A seems to be most common; one informant claimed it to be an older style than B. Some men use an additional piece of thong or a wrapping around the part of the shoe string which goes over the top. This is to thicken it and to prevent cutting into the top.

"Snowshoe square or oblong /sic, grizzard/ were in use. These consisted of tips of goat's horns attached to snowshoes to prevent slipping on very hard or heavily crusted snow and icy ground. Two were attached to each shoe on each side of the frame near the front cross bar where they were lashed in place. The butt end of each of them was notched on one side to better fit the frame. They are still used. (See National Museum specimens Nos 188 and 189), according to Emmons similar spurs are also used by the Chilkat and Sitka etc. (See Emmons p. 6).

A winter walking stick or snowshoe staff was in use, chiefly by hunters in deep snow. It was made of sapling spruce and had near the lower end a circular snowshoe-like frame filled with a netting of babiche. Most of them were of the same type as used by the Carrier (See Morice, Fig. 244). In some others differed only in the method of netting. (Also see description by Emmons, p. 6). These sticks are now seldom used.

Most informants claim that no methods were in vogue for preventing the slipping of moccasins on icy ground. All agree that no novel pieces of leather for this purpose were used in order of moccasins as was common among the Interior Indian. However a few people used a somewhat different method which I have outlined on at least two pairs of old moccasins thought to Tahltan hunting camps. Instead of strips of leather sewed on, a thing is passed in and out through small holes or small slits made in the sole of the moccasin across the heel and the ball of the foot. The end of the thong is doubled back and threaded through the loops or parts of the thong on the outside of the sole. This forms cross pieces on the sole of the moccasin resembling twisted cords.

under the other across the back of the dog, either end being available as top cover. Material to be packed is placed in the bags, it being necessary to have the contents of each about equal in weight. The covers of the bags are fastened down with a lacing of thongs passed through a series of loops of the same material in the upper sides of the bags, the lacing passing from one bag to the other across the like /sic/ and the back of the dog. The bags are kept in place by a single cinch rope of leather or canvas about two or twelve feet long which is first passed around the ends of the bags below the sides of the dog and then around the bags underneath the dog and back over the top to the point of commencement. There are several slightly different methods of fastening the bags. (For specimen of the common dog packing of the Indians see National Museum specimen No. 231).

Dogs pack weights of twenty to fifty pounds according to their size or strength. Families have two or three to six or more dogs. The difficulty of feeding them on various occasions often alone limits their number. Large white dogs good for both packing and driving and well enough behaved to withstand camps well are in demand and some dogs exchange for as high as $40.00 or even more.

Horses

The Indians saw the first horses about 1670, when pack trains of horses and mules passed northward from the southern interior of Spanish Columbia to pack during the gold mining excitement. The packers with these trains were Mexicans or Spanish half-breeds, Indians and Indians from the Okanogan and Lillooet valleys and from Thompson River, accompanying the latter were two Shuswap Indians, one a Indian and one a Nez Perce. Some of these pack trains became permanent, and after a time each half of this blood was supplied by young men of the Indians, who thus became acquainted with horse packing, and horse management, including shoeing of horses. With the discontinuance of mining some of the pack trains had left by 1884. However, some horses were retained in the country for packing purposes by traders and others and there was again an increase of horses and packing during the Klondike excitement. Later packing of supplies for the Yukon Telegraph line and development of the gold fields due to the almost entirely of packing animals, added to the packing done by traders

with tanned hides on one side. It is said the design here is special significance, being merely for ornamentation, each person making them according to fancy. (For illustration of these boxes and other designs see illustration of 22 of them, Beaver, Fig. 121. For illustration of a pedestal see Beaver, Fig. 12. The Tahltan made this in a woman's shape, see also National Museum specimen 12).

Some pack-straps were made of heavy leather throughout, but these did not differ in size and construction from those of bag skin.

In the present day Indians's fur packs are sometimes used in place of tump-lines for carrying light loads across the chest of the head. Brass straps attached to hooks for carrying across the chest were made of plaited rawhide strips (three or four strands). These varied in length and the longer ones were used as dog harness and for various other purposes. In carrying they were often doubled (specimen 12, National Museum).

Many loads had breast-straps as well as head-straps attached to them so persons could relieve the strain by using one and then the other. Heavy loads were carried on the back, especially on hills or on difficult ground -- but light loads were frequently carried across the chest. Pieces of skin, blankets, clothing, etc., were often used around the shoulders, across the chest, and then across the back under the straps to relieve the pressure with heavy loads. If the detachable packed was here, pads were sometimes placed between the back and the load for similar reasons.

Smaller and large bags for transportation were lashed to travoies made with poles of various lengths. Some of these back-rests had frames made of boxes of bags and other packs which were used for attaching the rope around. These were employed for easier attachment and unloading of the pack. Beaver describes some of the methods of attachment (see Beaver p. 22). For other common methods of lashing and attachment see lashing as arranged on women's pack bag, National Museum specimen No. 12 and 13. (The latter has tump-line fragment). Small specimens of bags were carried in game bags, but large loads were tied up in lashing with various ties and carried with a head-strap. Brush was generally put between

the meat pack and the back, or sometimes the folded skin of the animal. Meat for carrying was also rolled up and lashed in the skin. No sinews were run through the pieces of meat to keep them in position nor were temporary bags made of skins as among the Nitak and Shuswap. /Use of the Salishan Okanagan or "Thompson River Indians"/

Skins however were made into temporary toboggans and meat hauled in them on the snow as among the interior Salish.

Skin Toboggans

As already mentioned skin toboggans are still used to some extent for hauling stuff on the snow and before the advent of the wooden dog sled were extensively used for this purpose. They were made of large skins of caribou in the hair, trimmed in even width and sewed together with sinew, the hair /being placed/ all the same way and lengthwise with the toboggan. The bag of /the/ toboggan is closed at the top with a lacing of thong which passes through slits cut in the skin along the borders. The low line passes through the heavy loops of hide at the head, the skin there being drawn together when in use making the toboggan enlarged and easier to drag in the snow. Women generally hauled these toboggans (See National Museum specimen No. 10; also description of Hamons p. 53).

Trade

According to tradition very long ago there was little or no intertribal trading and the Tahltan gives evidence the following of pre-trading days. People dwelt far and widely scattered and therefore seldom met each other. Long ago the Tlingit of the Coast were never met. They never came up the Stikine very far and the Tahltan never went down far. There was thus no trading with the Tlingit. At last Tlingit commenced to come up the river and finally met the Tahltan, after which they came often and finally came annually. The time when trading with the Tlingit commenced was long ago, but still not so very long ago. The time is quite indefinite. It seems, however, that the Tlingit have traded with the Tahltan for a long time back. No doubt a great impetus was given to this trade by the arrival of trading vessels among the Tlingit in the beginning of last century and the establishment of trading posts by the Russians. In the quest for furs the Tlingit became in this trade middlemen between the

6: Honigmann E-5 (1941-1945)1954 ND12 Nelson ND12
Upper Lloyd
Dease River

In warm weather lasts for a week during winter. Summer babiche looks ready to compare to the winter variety. Cold weather drying also rendered the line softer and more flexible. Stretching frames for drying babiche were not generally used, although for heavy drying such line might be wrapped around a snowshoe. Pure fully tanned and smoked hide some smoked-skin line, of whose manufacture little need be said. Men collected the moss for spruce-root cordage but all subsequent stages of manufacture were carried out by women who scraped the moss with a moss knife and then boiled them for about half an hour. The worker then split each moss, smaller moss being split only once but very thick roots four times. Occasionally spruce roots were braided. This line kept here when loosely hung up and coiled to spoil if wound tightly. When spruce roots became hard and dry, they could be softened with grease but urine was never used for this purpose. White willow line, made in emergencies to pack meat, consisted of a long willow branch softened by heating over fire and then twisted until the fibers had been well broken. Willow bark line found a host of uses and yielded material for fish nets. Willow roots, collected by men, were softened through an hour's boiling, split, and then used for cordage. To manufacture green line women gathered the high sedge growing along lake shores. Bundled into sheaves for transportation back to camp, the material had to be fabricated quickly before it dried. Twisting converted the green tree line into material useful for only a short period of time. When confronted with the information that the Tahltan had woven goat's wool into blankets our informant (G) replied that the Kaska must have done the same thing.* Among the fibers commonly applied to the foregoing types of cordage are the running moss, bowline, and overhand. Two ends of babiche were spliced by means of a short hand.

Dease River Kaska. Some tools constituted the basic equipment in the Dease River area. A flexible moss as well as skeleton provided materials for blades which were then lashed to handles of bone or spruce and birch wood. Sinew or babiche line secured the lashing. To process blades men or women manufactured crosscuts from smoked caribou hide. The crosscuts attached under the moss belt of a person's garments. Although a woman had her own knife to bone did not differ from the man's and the objects were designated by a common name. Before beginning an daily stint a man might sing a lullaby while repeating the song, "Chawda, chawda." The chawda caused the magical power to sit into to the work.

Concerning work in clay, we found it impossible to check the testimony of our informant (G) that crucible said to be shaped from this substance and hardened by firing.

The surface of goat's horn also served as a tool and for woodworking and stone axes were dressed. Men split logs with wooden wedges and used spruce bedding tools to make floats in peeling spruce bark.

Bone constituted an important material for knife blades, the material being "wrapped" to an edge and lashed to a bone or wooden handle. Women used skin flakers derived from the leg bone of the caribou as well as skeleton scrapers for removing the hair of a hide. Sewing needles of fish bone are said to have been of recent introduction, supplanting bone awls. Unprocessed canine bone provided an awl as well as material for

* See, for Tahltan (Athabaskan) Work (1913), 40.

G:\Monograms E-5 (1943-1945)1994 MD12 Nelson MD12
Upper Level

224 Rabbit traps were of both the lifting-pole and spring-pole types. They were mainly constructed by boys and women. With each spring-pole snare went a notched trigger stick about three-eighths of an inch in diameter and four inches long (Fig. 3, a). The person going to set snares provided himself with a supply of these before having camp. At a rabbit run the trapper cut a foundation pole (Fig. 3, d), which he suspended loosely in brush or snare about ten inches above the ground. Above this he bent down the willow spring-pole toggle (c) and at b fastened the decided end of the snare line with a cow hitch. The other end was bent around the trigger stick, thereby securing it to the foundation pole below which the snare was spread, supported by twigs. Entering the snare a rabbit would dislodge the trigger stick, thus releasing it from the foundation pole and freeing the spring pole, which flew upward, drawing the rabbit, snare line, and trigger stick along. Five minutes sufficed to set such a snare.[1]

•[5.89]

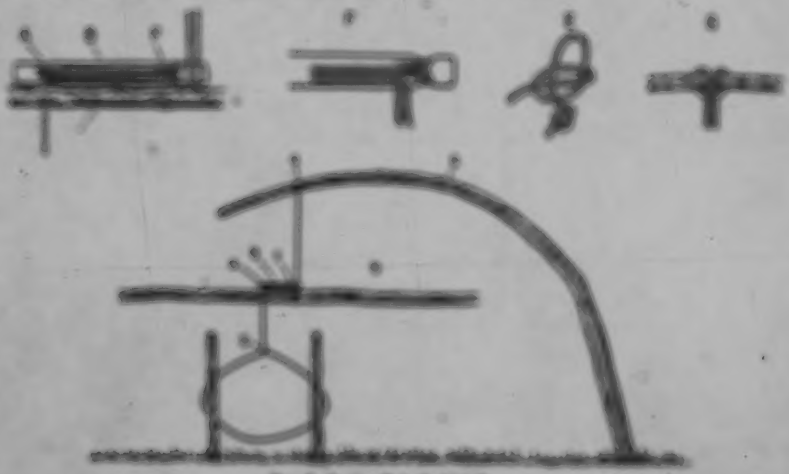


Fig. 3. Spring-Pole Rabbit Snare.

The bear, marten, mink, fisher, beaver, and ground hog were also hunted with deadfalls, the construction of which varied somewhat for the different animal species. Bear deadfalls consisted of a double tail log above which a sensitive pole trigger stick propped up a tail log measuring a foot or more in diameter. Vertical poles driven into the ground on either side of the trap secured a dress tail for the propped-up end of the tail log, while the opposite portion rested in a short, forked stick driven into the ground. Marten and fisher traps which deadfalls followed the same pattern but required only a two-inch diameter tail log, which rested directly on the ground. For fisher a somewhat

[1] Similar snares occurred among the Ingalik and Tanana, the Ingalik, Ingalik Material Culture (1940), 200 and figure; Ethnography of the Tanana (1937), 36. The currently greater complexity of the Kaska position may be related to the fact where bears with which the animal more prominent.

9: Hemingway E-9 (1943-1945)1934 MD12 Makaua MD12
Upper Lizard

even, does not grow in the Cuesta.* Knowledgeably wood for snowshoe frames was bent after first being carefully shaved with the teeth. The forward overlap of the two parts of the frame extended for about five inches on a real snowshoe and somewhat more on the shorter hunting variety. Two or three cross pieces resulted in three or four panels. A rounded snowshoe, it is claimed, did not sink into the snow so much in front as the pointed variety nor would it pick up so much snow.* While known aboriginally, the pointed snowshoe became more common following European contact.

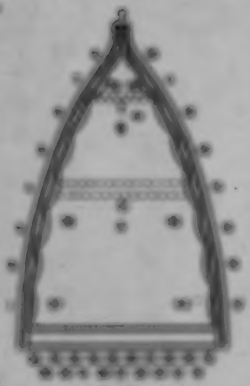
A craftsman "tailored" the size of snowshoes to their intended function. If designed for breaking trail in front of a toboggan or for following an already broken trail, the average size person could get along with snowshoes about three and a half feet long. Hunting snowshoes, designed for crossing over the surface of deep, loosely packed snow, almost equalled the height of the prospective wearer, the width being somewhat adjusted to the user's relative weight. Two varieties of babiche line served for filling, first, a heavy cordage that was woven into the cross panel supporting the direct weight of the wearer, and second, a fine line for the front and rear panels. Both men and women knew how to fill snowshoes but the process generally occupied the latter. In applying the line filling the artisan needed a loom snowshoe needle. In one type of needle the blunt end of the instrument was made concave in order to push through the line. The other end formed a slight hook, useful for pulling the line upward through filling already laid down. Another type of needle, made of wood or bone, contained a circular eye in which to anchor the filling cord. Prior to lacing, loops of cordage had to be provided around the inside of the frame, to which the webbing of the front and rear panels could be anchored. Holes for these loops are said sometimes to have been drilled with a piece of hardwood barrel to a plate and then passed against the appropriate point of the frame. Several attempts of the "awl" were necessary to complete the task. Bone and porcupine-tooth awls served as much more efficient drills.

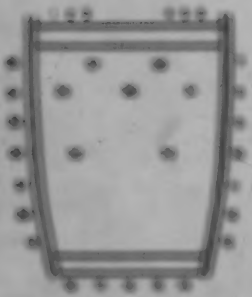
The following patterns of snowshoes being are derived from an analysis of contemporary snowshoes. No cultural differences from aboriginal practice could be discovered. When starting to fill a snowshoe the worker usually turned to the front panel, the line beginning on the right hand side (Fig. 4, cross view, facing front end of snowshoe). One end of the line passed through the line transverse loop (17) where it was tied with a double overhand knot. The other end was carried back to the complexus. Bending over the top of the cross (18) it came out from below and travelled up to the toe where it bent over the babiche which here held the frame together (9). (Knowledgeably the Lowlands type shown much have been provided with loops going completely around the front of the panel.) Coming out from below, the line crossed against its own part and

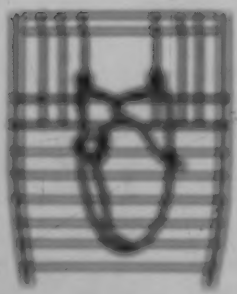
* Early Spaniards made "a specialty out of making snowshoes and bows" among the Indians. Chapman Indians, Handbook, Bibliography of the Chumashan Indians of British Columbia (1906, 40, 49); Kroeber, Handbook (Bulletin 78), Plates (1925, 14).

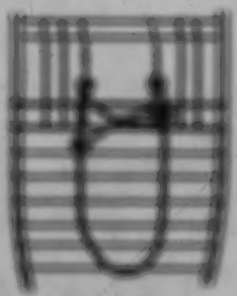
* In Fort Hilton an informant expressed an opposite preference when he said that wooden frame snowshoes were of little use "in this country, but in the Prairie, where the snow is packed hard, they are in use." Ethnographic and problematic of the Fort Hilton Area (1944, 6). Whether or not there is no difference in the quality of the snow between the Fort Hilton and Cuesta areas. The opinion expressed shows scientific interest in a bygone cultural pattern.

Upper Liard









[illegible]

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[illegible] twined back to the forward weft at the extreme left of the shoe. Bending over the top of the toe (26) it came up from below, twined around itself, and went to the first framework loop on the left side of the shoe (1) through which it passed from above. When pulled through this loop, the line lent against its two part counterpart to the next counter on the opposite side of the panel. Here, from above, it entered framework loop (6), lent against its own part, and revolved to the next station on the complement (19). The same process was now repeated. In going forward, the line wove under the strands previously laid (1-17, etc.). All strands passed under the beaver (a and e). In the snowshoe constituent the footpiece loops (6) consisted of several thicknesses of twisted lashings. This lacing may be followed to its conclusion by referring to the following pattern and to Figure 5.

Pattern of lacing from stand of snowshoe (Fig. 5, center card): 17, 18, 9, 36 (twine around 9-36), 1, 17, 19, 9, 37 (twine around 9-37), 1, 19, 9, 9, 38, 38 (twine around 38-38), 3, 19, 22, 7, 11, 32 (twine around 19-32), 3, 19, 38, 7, 11, 39 (twine around 19-39), 3, 19, 22, 1, 11, 39 (twine around 11-39), 4, 19, 39, 4. The line here twice wound its 4-39 this from above (39), twined around its own part four times, then twice wound its 1-17 strand from above (17), twined thread to own part five times, and then proceeded to stations 1 and 19. While this running was completed the line traveled back to the 1-17 strand, then wound this strand from above (39), twined around its own part six times, and then passed on to its 9-19 strand. It then wound this strand from above (40), twined around its own part four times, and proceeded to the next station. The process then was: 38, 3, 19, 22, 7, 11, 39, 3, 19, 39, 7. The line now traveled to its 9-19 strand, then wound this strand from above (12), twined around its own part four times and proceeded to stations 3 and 19. While making this crossing the line traveled to its 3-19 strand, then wound this strand from above (40), twined around itself four times enroute to its subsidiary loop (a). From above the line now twice wound its 4-39 loop constituting this loop (41), twined around its own part, and proceeded to stations 39, 9, 19, 19. The concluding knot included its own part and the 39-7 strand (see Fig. 5, center card).

Leaving the own panel diagonal lash from the general scheme governing the lines. The knot held the shoe with the heel forward and began to lace right hand side (Figure 5, center card). The line was tied to the rear portion of framework loop number 11 with a double overhand knot. Moves back to 11, lent across the top of the complete unit, running our below, proceeded to the next station 6. Here the line lent from above around the lashing holding the heel of the snowshoe together. Coming out below 6 twined around itself twice from left to right and proceeded to the complement (22). 6 lent around this area from above. On emerging the line lent against itself and proceeded to framework loop 1, which 6 wound from above, lent against itself on emerging, and revolved to the opposite framework loop (11). In going forward (toward the heel of the shoe) the line passed under the strands previously laid while in returning to the complement the line wove under the strands already put in place. The lacing may be followed to its conclusion in the following pattern.

Pattern of lacing from stand of snowshoe (Fig. 5, center card): 11, 6, 6 (double twist around 11-6), 11, 6, 11, 22, 6, 7, 22, 6, 18, 6, 7, 18, 7, 18, 22, 6, 6, 18, 7, 6, 18, 22, 6, 6, 18, 7, 6, 18, 6, 6, 18, 3, 18, 17, 3, 6, 18, 3, 6. The line here twice wound its turn at 18, the seventh turn being there under its own immediately preceding turn.

6: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12
Upper Liard

The lacing of the center panel (Figure 4, CENTER LEFT) is more complicated than that of the front or rear. The worker began by tying a single overhand knot to the left hand frame just below the forward crossplace (Fig. 4, CENTER LEFT), station 23, facing front end of the snowshoe.* The line then traveled three times across and back between the left and right sides of the frame (23, 7), in each case bending around the outside of the frame. This gave six thicknesses of laticks, three at the top and three at the bottom of the frame. Coming up and bending across the top of the left hand frame after the final crossing, the line was drawn back to its next station (24) and made four crossings between the left and right sides of the frame (24, 8), giving four thicknesses of laticks. This time, when the line came up to bend over the top of the left side of the frame, it lent around the four lines just laid and proceeded forward to bend over the top of the forward crossplace (1). Coming out from below, the line twisted twice from left to right around its own part between the crossplace and the 23-7 strand, and then times in the same direction between the 23-7 and 24-8 strands before proceeding to the rear crossplace. It bent over the top of the strut (16), came up from below, and twisted against itself. Going forward the line went toward the right-hand side of the shoe to the forward crossplace, across which it bent from above (6); came out from below; twisted around itself twice from left to right between the forward strut and the 23-7 strand; and twice more in the same direction between the 23-7 and 24-8 strands. Coming out from the 24-8 strand, the line bent against itself crosses to the rear station on the right side of the frame. Bending across the top of the frame (9) the line came up, bent against itself, and proceeded to the opposite frame (22), bending across this from below. On emerging the line bent against itself and proceeded to station 2, above the lines previously laid. The rest of the lacing may be followed from the following percent. Going forward the line passed over strands previously laid; going toward the rear crossplace it wove under the already laid horizontal strands.

Pattern for lacing center panel of snowshoe (Fig. 4, CENTER LEFT): (2), 7, (6), 8, 1 (double twist between forward crossplace and 23-7 strand; triple twist between 23-7 and 24-8 strands), (6), 8 (double twist, repeated as above), 8, (2), 2 (triple twist between forward crossplace and 23-7 strand; double twist between 23-7 and 24-8 strands), (1), (17)* (single twist between 24-8 and 23-3 strands, repeated between 23-8 and 23-10 strands), (6), (2), (9) (single twist, repeated as above), (1), (2), 2 (triple twist between forward crossplace and the 23-7 strand; double twist between 23-7 and 24-8 strands), (1), (17)* (single twist between 23-10 and 23-11 strands, repeated between 23-11 and 23-12 strands), (1), (9), (2) (single twist, repeated as above), (8), 1 (double twist between 23-7 and 24-8 strands), (1), 8, (8) (double twist between 23-7 and 24-8 strands). The free lace around the 24-8 strand from below (16), twisted around the 24-8 line now between the 23-7 strand and the forward crossplace, passed under the crossplace and came up to pass from right to left across the six forward running lines of the front panel (i.e., those proceeding from stations (2), (6), (7), (8), (9), (1) in Figure 4, CENTER LEFT). The line now passed under the

* In the case of the shoe made by the same worker the lacing at this point began by the free lacing pulled through a hole cut in the end of the core pack.

* This station, as well as (9), represents points where the line bent across only the top two lines of the four thicknesses of laticks which had been laid between stations (6) and 8.

* This station, as well as (8), represents loops around the 23-10 strand.

6. Honigmann K-5 (1943-1945)1954 ND12 Nahane ND12
Upper Liard

[illegible] rawhide rope, more up from below and bent across the 20-7 strand from above (27), then across the horizontal component from above (8), then twisted three times around the 2-16 strand between the horizontal component and the 20-7 strand, and twisted around the 20-7 strand moreover to the left hand frame, where the free hanging or unused 20 with a single overhand knot that included one part of the 20-7 strand.

Two types of harness, both made from smoked-skin line, secured the snowshoe to the moccasin-covered foot. One of these is said to have been introduced into the area from Fort Liard and is commonly referred to as the "Nahane type" (Fig. 4, COVER SHEET). The other was in use among the Liard River and "Tlingit" (probably Tahltan) people (Fig. 4, COVER SHEET).

To avoid slipping on steep hollow log bare plus were sometimes inserted into holes provided at the bottom of each snowshoe. The plus projected about an inch from the wood. The snowshoe staff further aided walking in hilly country. It consisted of a stick about four feet long with a hoop that was laced with babiche line. The hoop was beyond a short distance from the lower end of the staff and consisted of a short length of willow bent and lashed in the form of a circle. The filling served to keep the hoop afloat to the staff. A mass prepared wood for this implement while women customarily added the filling. No distinctive name for the snowshoe staff could be learned, informants designating it merely as "walking stick." Morice, however, has translated the Carrier name for this implement as referring to the "circular attachment which prevents it (the staff) from sinking too much in the snow."[illegible] Men even wore glasses when traveling across snow made bright by the spring sun. These implements consisted of strips of tanned skin or birch bark provided with eye slits. The area around the slits was blackened with charcoal to further reduce glare.

Land travel in summer or winter generally involved men walking in advance of the women, who remained in charge of children and household goods. This person left men free to investigate or follow game, reduced disturbance that might drive away game, and also enabled men to prepare sufficient wood for a comfortable camp before the women arrived. Sometimes women and children did not reach a camp until midnight.

In summer, moreover to the ground-hog trapping grounds in the mountains, a number of families moved together, the men scouting for moose and the women walking in old and well-defined trails. People crossed streams on rafts as well as on log bridges constructed by felling either one, two, or three thin trees or by shifting an already fallen tree into position to serve as a span. In traveling to a game hill, as well as in other types of cross country movements, Indians sometimes indicated their route by blazes. One type of blaze consisted of a willow or other branch broken in the specified direction. In an "open place" the route might be indicated by hanging moss in trees, while up in the barren mountain tundra, which composed a sizable part of the Kaska territory, successive rock piles served as guides. River valleys were customarily referred to as giving

[illegible] Stories, Carrier language (1906), 92. Lantis describes a similar "snowshoe stick" in use among the Nunivak Eskimo (Lantis, Social Culture of the Nunivak Eskimo [1946], 92.) Vitt informants among the Hidatsa-speaking Fort Indians of James Bay denied the use of snowshoe pegs or the snowshoe staff. The snowpegs of the bear claw have usually a "comfort" with a rabbit bone rest. These allowed bear persons to support themselves on snow. Honigmann, ethnographic field notes (1947-48).

[illegible] [Erratum. Probably what "means" = Analysis]